REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1, 3, 5 – 9, 11, 13, 14, and 21 – 26 are in this case. Claims 1, 3, 5 – 9, 11, 13, and 14 have been rejected under 35 USC §112 and 35 USC §102. Claims 21 – 26 have been rejected under 35 USC §102.

In response to the Examiner's analysis: claims 1, 3, and 5 – 8 have been cancelled. Claim 9 has been amended to take into consideration the Examiner's comments regarding the §112 rejection. Furthermore, independent claims 9 and 21 have been amended to take into consideration the Examiner's analysis regarding the §102 rejections based on the prior art of Galea US 2002/0004908.

No new material has been entered, and claim amendments which distinguish the present invention over the prior art are fully-supported by the specification as originally filed.

The Applicants therefore believe that claim 9 now complies with 35 USC §112; and that claims 11, 13, and 14, which depend therefrom, likewise comply with 35 USC §112. Furthermore, the Applicants believe that the amendments to independent claims 9 and 21 clearly distinguish the present invention as being novel and non-obvious over the prior art, and therefore in compliance with 35 USC §102; and that the remainder of the claims, which depend therefrom, are likewise in compliance with 35 USC §102.

§112 Rejections

In response to the Examiner's analysis, the Applicants have cancelled claims 1, 3, and 5 – 8, and have amended claim 9 in accordance with the Examiner's observations. Regarding the term "original component", the Applicants have elected to delete the term "original" from claim 9.

§102 Rejections

The Examiner has rejected claims 1, 3, 5 – 9, 11, 13, 14, and 21 – 26 under 35 USC §102 as being anticipated by Galea (US 2002/0004908), which discloses a system and method for detecting the presence of viruses in electronic mail. As illustrated below, however, the present invention has novelty over Galea in that according to embodiments of the present invention, the detecting and correcting of malicious email involves analysis and correcting of formatting and structure of the email *over and above* analyzing the content of the email. In contrast, Galea relates *only* to the content of the email and does not address issues of formatting and structure. The current amendments to independent claims 9 and 21 of the present invention therefore feature rules other than those directed to the content of email components, in order to distinguish the present invention from Galea.

It is first noted that in the present art, the terms "format" and "structure" are related and are generally understood to denote concepts characterized as "the organization of information according to preset specifications" and "the arrangement of data for storage or display". The emphasis on "arrangement" and "organization" clearly excludes consideration of the content and the intended meaning or purpose thereof. The Applicants therefore maintain that regarding data and information, a clear distinction exists in the art between the concept of "content" and the concepts of "format" or "structure".

(The following citations of the present application are identified by the paragraph numbers in the published version, US 2005/0081057.)

Regarding the usefulness of analyzing email components for characteristics other than content, the present application discloses, for example (with emphasis added):

> [0002 of the present application] "The *structure of email messages is defined for example in RFCs 2822, 2045-2049.* According to the recommendations of these publications, email messages should appear in *textual format*, i.e. comprise only ASCII characters, contrary to a binary format. Thus *the structure of email messages is actually flexible, despite the existence of definitions regarding email structure.* Moreover, email clients try to handle deviations from what is considered as standard in order to enable communication between as many email clients as possible."

It is also noted that the above-referenced publication *RFC 2822* is titled "Internet Message Format" and relates to issues of formatting and structure of electronic mail without regard for the content thereof.

The below citations from the present application teach that it is advantageous to analyze email for properties other than content, because other properties may be exploited for malicious purposes.

> [0003 of the present application] "The relatively *free structure may be exploited by 'hackers'* for introducing hostile content into recipients' computers, mail servers and inspection facilities (i.e. systems for detecting hostile content within email messages) operating between senders and recipients."

> [0017 of the present application] "FIG. 2 schematically illustrates a buffer overflow attack. The computer memory **20** 'holds' an email-client software **21**, an email message **22**, and a system stack **23**. *Using a malformed structure of the email message* **22**, the content of the email message **22** may overwrite the memory allocated for the system stack **23**."

> [0045 of the present application] "As mentioned above, *a well-known vulnerability of email-related systems is the length of some of the formats*, which, for example, at Base64 should be a multiple of 4, i.e. 4, 8, 12, 16, 32, 64 bytes, and so forth."

Accordingly, the present invention teaches analyzing email properties other than content, such as the structure:

> [0046 of the present application] "Therefore, *the present invention provides a method and module for preventing exploiting email messages by using uncommon structure thereof.*"

In contrast, Galea is directed to detecting and neutralizing the threat of viruses and malicious code contained in electronic mail, and thus discusses analyzing and correcting email only according to content.

It is significant that Galea makes no use or mention of the terms "format", "structure", "form", or any related terms or concepts. Galea is thus completely silent on issues involving format and structure of email.

Instead, Galea clearly relates only to data content, as exemplified below (emphasis added). In particular, Galea stresses analyzing email for content such as tags, macros, and operable program code, and the content-oriented nature is underscored by Galeas's use of terms such as "contain", "containing", and "the presence of":

> [Abstract of Galea] "An anti-virus system for electronic mail messages having detection means for determining the presence of an electronic mail message and analyzing and scanning means for detecting in the electronic mail message any *tags indicating the presence of operable program code*, such tags and operable code are removed from the electronic message before the message is delivered to the intended recipient. Means may also be provided for separately scanning the body and attachments of the message and for quarantining either body text or an *attachment that is found to contain operable code* until a decision is made whether the operable code should be deleted."

> [0006 of Galea] "According to the present invention there is provided an anti-virus system for an electronic mail message, the system including means for determining the presence of the electronic mail message; means for analysing and scanning the electronic mail message for *tags indicating the presence of operable program code*

and for removing any such tags and operable program code from the electronic mail message; and means for applying the electronic mail message with the tags and operable program code removed to server means."

[0011 of Galea] "Advantageously the means for analysing and scanning includes means for *scanning attachments for operable macros*."

[0046 of Galea] "...The bodies and attachments are sequentially scanned, step **104**, to determine whether any of the said bodies or attachments *contains a character string indicating the presence of operable program code. ... If a script tag is found in an embodiment or attachment, the program is removed,* step **105**, from the body or attachment and preferably replaced with replacement text. Such replacement text may indicate to the eventual recipient of the electronic mail message that operable code has been removed. .... Alternatively, *the message containing script tag* may be quarantined until subsequently released or deleted."

[0047 of Galea] "Simultaneously, or sequentially, the attachments are scanned *to determine the presence of macros*, as illustrated in FIG. 2. As already described in relation to FIG. 1, incoming or outgoing electronic mail messages are received by the electronic mail server, step **201**, and an electronic mail message is isolated, step **202**, and any attachments **212**,**213** are removed, step **203**, from the electronic mail message and sequentially *scanned to determine whether the attachments contain macros*, step **214**. If a macro is detected within an attachment, the attachment may either be deleted, step **215**, or quarantined, step **216**. Alternatively, the macro may be quarantined and the attachment released with the macro removed. If the macro or attachment is quarantined, a decision will subsequently be made, step **217**, whether the macro or attachment should be deleted, or reassembled and reattached to the electronic mail message, step **218**, or forwarded by other means to the intended recipient. *If no macros are found in the attachment,* then the attachment is reattached to the electronic mail message, step **218**, and the electronic mail message is passed back to the electronic mail server, step **219**, for forwarding, step **220**, to the intended recipient. If an attachment has been deleted then a new attachment may be attached to the electronic mail message indicating to the intended recipient that the original attachment has been removed. In this manner, the method of the invention automatically removes any attachments from an electronic mail message which have the capability of running program codes or external programs by using macros. *That is, all macros or attachments*

> *containing macros are removed and deleted,* or at least quarantined, whether they are harmful or not."

As indicated above, Galea fails to disclose analyzing email for any aspect other than content. That is, Galea fails to teach or suggest anything involving formatting or structure of email components.

Therefore, the Applicants maintain that analyzing and correcting email components for aspects other than content (i.e., by format or structure) is a novel and non-obvious feature of the present invention. This novel and non-obvious feature has thus been incorporated into independent claims 9 and 21. Accordingly, the Applicants respectfully submit that the amended claims as presented herein serve to clearly distinguish the present invention from Galea.

Support for the present claim amendments is found in the above citations from the present application.

In conclusion, the Examiner's comments have been given careful and thorough consideration in the above amendments to the application. In view of the above amendments and remarks it is respectfully submitted that the present claim amendments are responsive to the Examiner's Action and that the presently-amended claims are in condition for allowance. Accordingly, a notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

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